

AMATEUR RADIO



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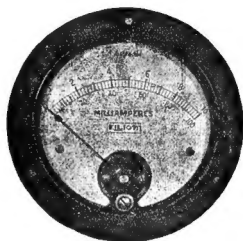
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AMATEUR RADIO

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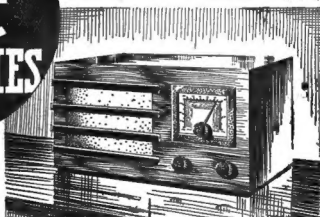
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Editorial

Possibly every subscriber to Amateur Radio has had some criticism to make of it at one time or another, and largely as a result of the friendly, helpful advice of many, the standard has been improved in many ways. However, one complaint—one that is probably more numerous voiced than any other, is the matter of late delivery each month. Whilst realising the importance of the matter, we must confess that it does not appear quite as serious as is sometimes made out. QST, Radio, and T. & R., are not "stale news" when received many weeks after publication, and Amateur Radio contains very little topical matter excepting Divisional Notes. Even of these it is somewhat difficult of understanding, for we assume that it is of the same breath-taking interest to know two weeks hence as now that "3XXX has blown his crystal," or that "3YYY has a new YL." Don't misunderstand us; we do not condone the matter in the slightest degree, and the Magazine Committee, through a complete and careful examination of all aspects of the problem this week, have re-organised some sections with a view to overcoming this difficulty once and for all. Our aim is to get Amateur Radio out during the first few days of the month, and the Committee will do all in its power to achieve this. However, there are various variable factors that can mitigate against success in this direction, the most important of which is the arrival of copy by the due date—the 18th of the month. This is of paramount importance. It must be remembered, too, that this Magazine takes a great deal of time and effort to publish, and—an equally important factor—each of the Committee has his livelihood

to earn. During a busy period one's job must come first, so if you, as a subscriber, don't agree with some feature or aspect of your Magazine, then we ask, firstly, your indulgence, because this job is an amateur one, and, secondly, your constructive criticism.

Such a letter of criticism appears in our Correspondence section of this issue, and whilst we do not agree with the remarks of the writer, we realise his is a sincere attempt to alter something with which he is not in agreement. It is the matter contained in this Editorial page that our correspondent disapproves of, so a word of the Editors' attitude to this page would be timely. The Editorial of a publication is the forum where the Editors can state their ideas and thoughts in the same way as the Correspondence page is the place where a reader may express his or her views. Our attitude to this page has always been that any matter that needs voicing will be given prominence without fear or favor. Whilst not deliberately looking for contentious subjects, if one needs discussing we will not avoid it. Your Magazine Committee are all Amateurs, with the same desire as yourself to see the Wireless Institute and Ham Radio progress. Our views may not always coincide with your own, which is as it should be in a live body like ours. Honest disagreement and criticism is a proof of healthy, enthusiastic activity, therefore we thank our correspondent for his letter, and naturally won't take the obvious advantage of answering his criticism here.

Remember this, every subscriber has the same right to express his opinions in this Magazine as the Editors, sincerity being the only requirement and space the only limitation.

The VK2JX Super

By Peter H. Adams

PART 2

Having discussed the technical considerations underlying the design of the receiver it now remains to describe it in the practical form.

The circuit is shown in fig. 1. The photograph gives a good general idea of the layout.

A drum dial is used to allow a symmetrical and convenient arrangement of converter and oscillator circuits. Five plate midget condensers are used for tuning and no attempt is made to get 100 per cent. band spread. However, there is no reason why those who must have band spread should not use any of the usual systems. Of course if 23 plate padding or band-setting condensers are used less turns must be used on the higher frequency coils. With the arrangement used the 14 mc. band is spread over 15 degrees, and the 7 mc band over about 30 degrees. It will be seen that a large knob is used to drive the dial and tuning is accomplished by slowly rotating this knob with the tips of the fingers resting on the top edge. By this means fine tuning is comparatively easy and at the same time the band may be covered in a few seconds if desired. However, the question of bandspread is largely a matter of personal preference. The receiver was designed mainly for high sensitivity on the 14 mc. band and it was deemed preferable to avoid sacrificing sensitivity due to a low L/C ratio, brought about by large padding capacities, and also the losses that extra condensers in the tuned circuits would introduce. Isolantite insulated tuning condensers and coil sockets are used in the RF end to minimise losses, and coils are wound on high grade $1\frac{1}{2}$ inch diameter moulded bakelite former. Grooves were turned in the former to hold the spacing permanent. All wiring in the tuned circuits is short and direct tinned copper bus-wire. Although the chassis is cadmium plated, and sprayed only on the top, the additional precaution is taken of running a heavy bus-wire around the underside of the

chassis earthing all I.F. transformer cans and valve shields. All by-pass condensers are also earthed to this bus-wire. It might be mentioned in passing that if Radiokes Isolantite midget condensers are used it is essential to fit a solid wiping contact to bear on the back end of the spindle as contact through the bearing itself is very poor and prone to be erratic.

A three plate midget is connected in parallel with the converter tuning condenser to allow this circuit to be tracked accurately with the oscillator.

However, by judicious pruning of the coils it is not at all difficult to make them track across each band and then this condenser, once set, need not be touched again. The receiver is arranged to work from a doublet aerial, but has since been used with a single wire feed matched impedance Jones antenna with almost identical results. In the case of any other type than a doublet, one aerial terminal should be earthed to the chassis and the aerial connected to the other one. The power supply for the receiver delivers 250 volts and is filtered with two alleged 30 Henry chokes and three four-microfarad condensers. The receiver is quite hum free.

Testing and Alignment.

It is doubtful whether any ham would build a receiver identical with the set described. It is much more likely that some of the ideas incorporated in it would be combined with other ideas of the builder's own. However, the following alignment procedure should apply in most cases.

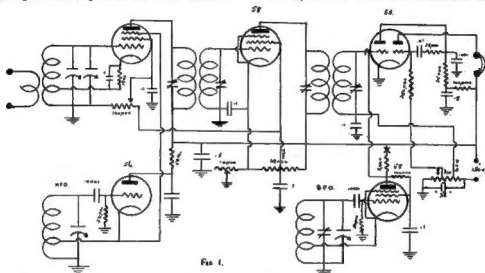
The set should first be connected to the power supply and the clip on the voltage divider and the two clips on the main bias resistor set to the voltages shown in the circuit.

To align the intermediates a signal generator or service oscillator is almost

essential. However, if the I.F. transformers have been purchased from a reputable manufacturer, they will probably have been adjusted to approximately the correct frequency, and it is possible then to align the receiver on noise alone. The aerial should be connected and the IF gain and converter regeneration controls turned up until a small amount of noise is picked up (B.O. switched off). The trimmers should then be peaked one at a time and the process repeated several times.

sitivity at 14 m.c. was found to be too high to be measured, being well under one half microvolt for one quarter milliwatt output on both C.W. and a 30 per cent. modulated signal.

To those accustomed to working with commercial receivers with 3 watts or more output feeding a speaker, one quarter milliwatt may seem a small output compared with the usual standard output of 50 or even 500 milliwatts, but it must be remembered that



It should then be possible to find a peak on the three plate trimmer across the first detector grid coil. If not it may be necessary to slacken off the grub screws holding the 5 plate condenser tuning this coil and to rotate it independently of the oscillator tuning condensers to find a peak. If this is the case it indicates that the coils need pruning.

A loud C.W. signal should now be tuned in (only hum and clicks will be heard) and the B.O. switched on. Then with the belt control condenser set at half capacity the B.O. trimmer should be screwed up until the B.O. beats with the signal and reaches zero-beat. The panel control will then throw the B.O. either side of the intermediate frequency.

Of course the alignment can be done with much more accuracy with a signal generator or oscillator, and output meter, and generally a better single-signal effect can be obtained.

Performance.

The receiver was tested with a standard signal generator and sen-
(Continued on page 14)

the receiver is designed to work into a pair of phones and one quarter milliwatt into the average pair of phones produces a "hear it all over the shack" signal which would generally be classed as about R.8.

It might be mentioned that these measurements were taken with the I.F. gain control in the normal position, which is well back from maximum (approx. 15 volts bias on I.F. tube). In fact, it is never necessary to use the full I.F. gain. It is best to work with the first detector regeneration just slightly back from the point where oscillation commences, and the I.F. gain well back.

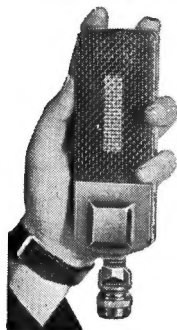
The first detector should go into oscillation with the regeneration control almost at maximum. If it oscillates before this the aerial coupling is too loose, and if it cannot be made to go into oscillation, the aerial coupling is too tight and should be adjusted accordingly.

Oscillation in the converter can be detected by swinging the converter trimming condenser back and forth as

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Reduction of Car QRM

By I. Patterson, VK3YP.

As the years roll by, and we have been slowly pushed, gladly or otherwise, to higher and higher frequencies, the battle with our oldest enemy, man-made electrical interference, has been steadily increasing.

Unfortunately, now that the 14, 28, and 56 M.C. bands have become three of our most valued possessions, so has the rapid growth of the use of automobiles increased to such an extent that this source of unpleasantness has reached an alarming proportion, and is no

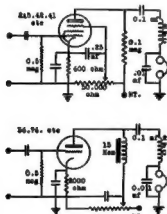
it. When we go back a few years to the time when a UV199 or such-like (equivalent) was our standard of excellence, we find our audio output to the head-set or speaker limited to around .02 of a watt.

Assuming that we now have an audio output capability of .1 watt to our phones, and that it is generally accepted that approximately .01 watt or 1-milliwatt power output represents a good, healthy signal, we can readily understand that the peaks of automobile or other interference, which easily reach (peaks?) of .1 watt, not only tend to drown out our previously comfortable signal, but cause the ear diaphragms some exceedingly uncomfortable moments.

Now, if the audio power output can be varied at will from approximately 1 milliwatt, or even less, to the maximum available, we can limit this output to accommodate the desired signal, and at the same time hold the strength of the interference to a point no louder than the desired signal.

The wave form of the majority of interference consists of high amplitude peaks, while there are a number of comparatively quiet troughs in between, which, however, pass more or less unnoticed until such time as these peaks are lopped off to the level of the required reception, and it is then that the desired signal becomes apparent, and much more readily understandable. This same fact holds good on rapidly fading signals, and we find the stronger peaks ironed out and the signal appears to be practically steady, unless, of course, the fading is so severe that the signal is falling below audibility.

When, however, the strength of the received signal exceeds the limited audio output capabilities already set by the control, distortion becomes apparent. As far as the C.W. man is concerned, this occur-



doubt one reason for the spasmodic appearance and disappearance on the 38 M.C. band of stations other than the old regulars.

Happy indeed is the amateur who can enjoy a pleasant contact unaccompanied by crashing static or a machine-gun-like background which threatens to overcome all but the loudest signals.

The modern receiver has improved to such an extent that the available audio output in any typical amateur superheterodyne or T.R.F. is of the order of .08 to 1 or 2 watts.

This also has done nothing to lessen our problem, and, on the contrary, has definitely accentuated

rence is of little importance, but for the reception of telephony a slightly higher output setting than the desired signal level should be used; in any case, slightly distorted telephony reception is preferable to that which is marred by disturbing interference. No attempt has been made to match the phones to the audio tube, and a little experimentation in this direction might well repay the super high-fidelity telephony man.

sional power leaks, appear as if by magic, while signals which were around R7, and well-nigh unreadable, stand out of the background and the operator relaxes and enjoys many a pleasant QSO.

When, on the now-a-days infrequent occasions, the operator happens to be on the air very late at night, or in the early morning hours, when all self-respecting automobiles are parked in dark corners, or safely garaged, the limiter becomes a joy to handle, the hiss of the B.F.C. is cut down so much as to be inaudible, and signals of the R2 to R3 variety become QSA5.

In conclusion, thanks are due to H. A. Robinson, W3LW, for the original write-up on this subject, and it is to be hoped that anyone incorporating the device in their own receiver will find it as beneficial as I have done.

In the case of a pentode output tube, type 2A5, 41, or 42, the output is limited by control of the screen potential by the 50,000 ohm potentiometer. The triode tube, type 56, 76, etc., has its output controlled by varying the plate voltage in the same manner.

Here, at 3YP, when the screen voltage on the 42 audio tube is swung to zero, signals hitherto unheard in the roar of unceasing automobile traffic, vacuum cleaners, and occa-

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A Visit to VK6MO

(By VK2CL)

The township of Watheroo is situated about 150 miles north of Perth and about half-way to Geraldton, and the road leading thereto must be the worst in Australia, the car at times just about disappearing from sight in the potholes!

The Carnegie Magnetic Observatory is about 15 miles west of Watheroo (i.e., toward the coast), and a more lonely and desolate qra would be hard to imagine, just scrub-covered sandhills as far as the eye can see.

On arrival I was amazed to see the number of buildings there were, and wondered if they had used some sky hooks to get them there, as it did not seem possible that such a quantity of material had been transported over the narrow winding sand track I had just traversed! I received a very warm welcome from Mr. Green (who does the magnetic observations), and was shown around.

There is a very fine home (completely wire-screened against flies and mosquitoes), beautifully furnished, piano n'everything, a golf course, tennis court, windmills, several wells (to ensure plenty of water during drought periods), and a very fine generating plant, one of the units being a 10 k.w. direct-coupled outfit (6 cyl. motor).

It so happened that the day I arrived was Mr. Seaton's busy day, and he was doing what he calls "a run," i.e., a series of ionosphere measurements; so to keep me out of mischief until he had a little time, he put on the FBXA for me, and everything seemed to be R9 on it!

The shack is just about a "ham's" paradise, nice open fireplace, operating table de luxe, and a comfy chair; but I believe it gets a bit hot in the middle of summer!

The transmitter is on the right as one enters the shack, and is used for both ionosphere measurements and communication. It consists of a 210 c.o., a pair of 865's buffers, and a pair of 860's in the final amp.

During ionosphere measurements the master oscillator is pulsed 90

times a second, each pulse (or dot) being of a duration of 1/10,000 part of a second (just about licks that "bug" of yours, 3EG.H1!").

A frequency of say 3000 k.c. is set up and 90 pulses are sent out, then the frequency is changed. This happens every 30 seconds, gradually going up in 200 k.c. steps.

The pulser is a tuning fork controlled converter, giving 110 V. 60 cycle, and accurate to within 0.01 per cent.

An oscillograph is also run from the same source, so that the pulse as seen on the screen appears to stand still.

While these signals were being transmitted I watched on the oscillograph screen, the "echoes" coming back to earth from the "F" region. Quite a thrill, I assure you. The fading effect due to the rise and fall of this layer was also very noticeable.

The receiver is directly across the room from the transmitter, and is a 22-valve superheterodyne! It has a sensitivity of $\frac{1}{4}$ micro volt per meter, and is capable of an output of 10 watts undistorted. It has a continuous frequency range of from 500 to 32,000 k.c. by changing coils. The output is fed directly into the oscillograph element.

There is also a monitor attached which can be used for tuning and adjustment. It, however, does not have 10 watts audio output, but makes an awful racket in the comparatively small room, so was not put on. The pulses are sent out and received in the receivers both before and after they are reflected from the ionosphere.

The directly received pulse is termed the "ground pulse," and the other is called "the echo." The time difference between the pulse sent out and the echo is measured directly on the oscillograph screen in terms of "equivalent height," which is recorded on the log sheets. This data is later plotted as frequency Vs. "virtual height" graphs, and the later

reductions taken from these graphs.

I was rather surprised to note the speed and precision with which Mrs. Seaton with a fine mapping pen does these graphs, and the great interest he got out of noting at what frequency the ionosphere was penetrated. These graphs are sent to Washington, D.C., and compared with others done in the other Carnegie observatories.

As the frequency is changed and measurements are made in the region of the ionosphere, it is found that first one and then another of these "regions" is penetrated. First the "E" layer is penetrated. This lies at a height of about 100KM above the earth. This layer is usually penetrated at around 3000 to 5000 k.c. during the day-time. This "E" layer does not exist to any appreciable extent at night. The next region encountered is the "F" region, which is in two parts (F1 and F2) in the day-time, merging to form one region at night-time. It is from this "F" region that most of the D.X. is reflected, hence is responsible for most of our grief and sudden surprises in the way of unexpected fadeouts and sudden bursts of extra good D.X. on some frequency or other. Its "critical" or penetrating frequency (i.e., when signals go right through it at a point directly overhead) varies over wide limits; at times during the early morning hours it may be penetrated at as low as 3500 k.c., whereas during some daylight conditions frequencies of 13,000 k.c. are not high enough to penetrate it. For this reason the ionosphere will support transmission at frequencies higher than the "critical" frequency as measured with a recorder, due to the refraction of the wave over long distances.

For communication a C.O. is switched in to take the place of the variable freq. oscillator. Several freqs. can be used in the 7 MC and 14 MC bands. The receiver, as mentioned previously, is an FBXA, and has a pre-selector, as other-

wise a certain amount of 600 meter "mush" gets into the I.F.'s.

The antennae are horizontal doublets for transmitting a vertical $\frac{1}{2}$ with counterpoise, and a horizontal Rhombic beam for receiving. This is aimed at Washington, D.C. Some work has also been done on 56 M.C.

I had a good look at the fb rack and panel construction of the transmitter (the Carnegie Laboratory build all their own experimental equipment), and as there was 4000 volts on the final amp., refrained from trying a lead pencil on the tank coil to see if there was much R.F.! Hi!

They also have a freq. meter and monitor, accurate to 1 K.C., so any one q.s.o.'s VK6MD can always be sure of an accurate check.

There is also a separate oscillograph (so called oscilloscope), which can be used to check modulation, etc. It is also used to tune up the I.F.'s in the FBXA, as, due to the wide range of temperatures here throughout the year, they get a bit out of line. (I believe the HRO's have automatic temperature compensators.)

On account of the sunspot activity, Mr. Seaton says that we may expect good D.C. conditions for the next two years.

After having a final look round and managing to collect a qsl card which was owing to me (yes, it must be the last in stock, hi! hi!), and feeling rather dry after doing so much talking, we went over to the house and had several cups of excellent tea, prepared by Mrs. Green. (These Americans do drink tea sometimes!) I also met the rest of the gang and had a good "chinwag."

As the sun was creeping toward the horizon, I decided it was time I was on my way, so with "good-byes" all round and a final SK on the horn, I departed, taking with me memories of real hospitality.

In concluding, I wish to take this opportunity of thanking Mr. S. L. Seaton for his co-operation and technical data, and also everyone who made my visit so interesting and enjoyable.

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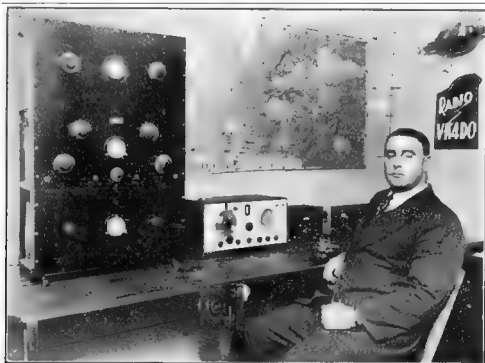
Station Description

RADIO VK4DO.

Harold L. Hobler.

Radio VK4DO was one of the first licensed stations in Queensland, and transmitted 240 metre broadcasts first in 1923, being also the first licensed receiving station in Rockhampton after the Great War. From 1923 to the present time it has never been off the air

1936 Hallicrafters Super Skyrider with crystal filter, especially brought out from Chicago. Next is a Gross Monitor, which keeps a check on frequency and signal, then a faithful Super Wasp, which served well for some years until displaced by the Skyrider.



for long, and of late years the log shows an entry for practically every day. The station has progressed from 140 volts on a UV202 in a self-excited Meissner and Hartley up to the present gear, namely, a 4-stage rack crystal controlled with 47, 46, 46 and 210 in the final on 20 metres, where the station practically always is situated. VK4DO has never in the 13 years of its existence used a greater input than 40 watts, always being on low power. The 4-stage crystal rig has switching for change to 40 metres by cutting out a 46 doubler. The transmitter is followed by a

A map of the world in front of the operator keeps brushing up his geography, and at the same time is used to show many stations and countries worked. It is mounted on a sheet of Celotex, and a pin is inserted at the exact spot a station is worked. The pin has a small flag at the top, on which is the station call. It only takes a glance to see just where QSO's have been made.

Crystal control has been in for some time. Prior to that the station went through all the old time—trying to get a good note—supplies,

Including the old slop jar rectifiers, Amrad "S" tubes, and an ESCO generator giving 500 volts.

In 1926 VK4DO was the winner of the Queensland Jewell Miles Per Watt Contest, communicating with Hawaii, California, and Oregon (U.S.A.), using 140 volts on a UV202. In this year the station was also successful for Queensland in the Trans-Pacific Tests conducted by the A.R.R.L. and the W.I.A. In 1925 it pushed 200-metre phone to New Zealand (2000 miles), using 160 volts on a receiving valve in the transmitter.

Despite the low input always used, all continents have been worked several times, five in one hour being the best piece of DX. The station also claims WBE. The OM is an original member of the Rag Chewers' Club. To date 56 countries have been worked in all continents. Over 2,500 contacts have been made, using never more than a 202 or 210. The aerial is a single wire with small counterpoise, in a poor location, but is always used. R8 reports from Europe and Eastern U.S.A. seem to indicate it is a good radiator.

VK4DO holds a first-class Wireless Operator's Certificate, but amateur radio is his hobby. When not with the gear, manages a theatre. Is married, with a junior op. three years old, and is 30 himself. Is keener to-day than when he started over 13 years ago.

202 Campbell Street, Rockhampton, Queensland, Australia.

STATION DESCRIPTION

VK2HV

Owned and operated by Harry V. Hutton, of Inverell, in the Northwest of N.S.W., VK2HV made its debut on 40 metres with the classic pair of 45's in push pull.

This humble breadboard layout has graduated, over a period of four years, into a considerably more complicated and effective rig.

However, and quite naturally enough, during that time a great

many transmitters and receivers have come and gone, some quite orthodox and others, for the cause of science — otherwise! Unfortunately, those coming under the category of otherwise refused to show even a glimmer in the good old pea lamp, so for them, R.I.P.

T.N.T. Hartley M.O.P.A. and what not were all tried and results were about the same; although many locals and ZL's were QSO'd, real DX seemed beyond their reach.

Then came in '34 the first Xtal rig, 47, 46, 10 and altogether about 16 countries were worked on 40 metres with a max. input of 9 watts! Xtal versus S.E. with a definite decision in favor of T9.

About three months later the Xtal gave up the ghost whilst in an experimental tri-tet hook up and S.E. once again came into its own; the advantages of T9 were remembered, however, and shortly another 3 stage rock outfit was in operation; phone was installed and when modulating (Heising) the input to the final never exceeded 3.5 watts. Some ever to be remembered phone QSO's were obtained with this hook up, and all States and ZL were worked on 40.

Then time began to tell; first the modulator gave out, then the 46 and finally the 210. It looked like a certain end to 2HV for all time, as, after all, even a ham can't spend all his cash on his hobby; particularly when he's courting his future YF hi!

But every cloud has a silver lining and at this darkest hour, Father Christmas, in the disguise of the genial Jim Campbell, an Inverell resident and radio enthusiast, came to light with his Xmas box, an open order with a well-known VIS firm for the gear to build 2HV 1936.

Frame mounted and some six feet high, this rig consists of 47 crystal oscillator on 80 metres, 46 doubler on 40, 46 doubler on 20, 210 buffer on either 40 or 20 and 210 final on both bands. Another final stage is to be installed shortly, using a 100 watt, and will be used in conjunction with antennae experiments.

(Continued on Page 13)

Correspondence

To the Editor, "Amateur Radio."

673 David Street, Albury,

14th July, 1938.

Dear Sir,—As an amateur who is interested in his Division, I take strong objection to your remarks in the Editorial of the May issue.

Firstly, you state that Victoria has to supply all the advertising and practically every article that appears. Is this correct?

It is not!

I have taken the trouble of checking through the Magazine from July, 1935, to May of this year, and find that, exclusive of Zone Notes and Divisional Notices, that Victoria supplied 19 articles, and other States supplied 24.

This shows clearly that the apathy you allege does not exist with regard to the articles.

Re advertising, you are mostly right, though ads. have appeared from other States, and the reason for this lack is probably on account of the time that elapses between the time ads. should be in (20th of month) and the date of delivery to "hams" in other States (as late as the 24th of the following month here once).

Secondly, you say that most Divisions are lagging in payments to the magazine.

Is the Editorial the place to say that?

Does it not indicate lack of business control by the magazine, and therefore their own fault?

We are not all financial experts.

It is not a great while since the N.S.W. Division became a part of W.I.A. in name, but during this period, friendliness and co-operation with other "hams" and Divisions have

been, and will, we hope, continue to be 100 per cent., and I am sure there is nothing you can ask the "hams" generally to do that they won't try, if it means improving Amateur Radio and the W.I.A., but we prefer honey to castor oil.

Your remarks are too sweeping and inaccurate to secure results.

Our memories are all unreliable.

Well, I guess the chest feels easier, so 73.

Yours faithfully,
R. W. Ross, VK2IG.

(Continued from page 12)

Each stage has its own plate meter finished in silver, and these, mounted on the front panel of black sprayed plywood with its control dials finished in gold, give the job a very pleasing appearance.

Three power supplies are used, one giving 350 volts for the oscillator and doublers, a second delivering 500 volts for the buffer and a third giving 650 volts for the final.

Two speech amplifier stages using 58's as high gain triodes follow the D104 mike; the third stage has a pair of 56's which in turn drive the modulators, a pair of 50's. Two receivers are in use, one a 6 valve dual wave, and an home-built E.C. job using 58 and 56. Monitor and wave-meter one a la QST handbook.

Well, that's the Xmas box; what do you think of it?
So do I hi!

With this line up 36 countries and W.A.C. have resulted. Many antennae have been tried, but all gave about equal results when operated under the same conditions, it was proved beyond all doubt, however, that an alteration in direction made a big difference in results.

A 14 MC. rotary beam antenna is at present under construction, and should tests prove it successful, details may appear in "A.R." later.

(Continued from Page 5)

the regeneration control is advanced. A point will be reached when a whole flock of signals can be tuned in and out with this condenser alone. When correctly adjusted just short of oscillation this condenser should have only a very slight effect on tuning, merely altering the pitch of the beat note as it is tuned through resonance. The correct setting of this condenser is indicated by a sharp rise in background noise with the I.F. gain control advanced.

The measured single-signal effect was found to be approximately 30.1. That is, the power output was 30 times as great on the side of the signal to which the B.O. was tuned.

The selectivity was too high to be measured accurately on standard laboratory apparatus, but a sufficiently good idea can be obtained when it is stated that the signals from an 80 watt station half a mile away occupy approximately 20KC on the dial.

In conclusion it might be mentioned that this receiver was used throughout the recent German D.J.D.C. DX Contest, and gave complete satisfaction.

Coil Data.

28 MC

1½ Inch Former

Converter.

4½ turns 22g., spaced to cover 1 inch, tapped at ¾ turn. Primary 3 turns 30g., enamelled, spaced ½ inch from earth end of grid coll.

Oscillator.

4 turns 22g., spaced to cover 1 inch, tapped at 1½ turns.

14 MC

1½ Inch Former

9½ turns 22g., spaced 8 turns per inch, tapped at 1 1-3 turns. Primary 3 turns 30g. enamelled, spaced 3-8 in from earth

end of grid coll.

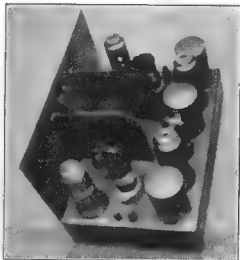
9 turns 22g., spaced 8 turns per inch, tapped at 2 1-2 turns.

7 MC

Tube base

15 1-3 turns 24g. d.s.c. wound close, tapped at 1 2-3 turns. Primary 4 turns 24g. d.s.c., spaced ½ in. from earth end of grid coll.

14½ turns 24g. d.s.c. wound close, tapped at 2½ turns.



A newcomer to the ranks of Ham radio is 3SU, Syd. Edwards, of Collins Street, West Preston (two doors from 3PA. Oh! the QRM, hi). He has only been on the air for a few months now, but works some FB DX with his QRP .45 TNT Xmitter and 6 watts. He has a two toob rx .57-2A5. The power pack for his rx supplies both Xmitter and rx by change-over switch. The ant. is half wave zeff facing N-S. Syd has a Xtal rig under construction. Behind the scenes he is a very active member of the W.I.A., and has been a member for three years.

QUARTZ CRYSTALS

Every Crystal tested to 50 watts input to Penthode Crystal Oscillator
 Accurate grinding to .03 per cent. 3.5 M.C., 20/-; 7 M.C., 30/-
 100 K.C. Xtals. 465 K.C. Xtal "Gates. Prices on application

PROMPT DELIVERIES

MAXWELL HOWDEN (VKSBQ) CONS. RADIO ENGR.

13 Balwyn Road, Canterbury, E.7.

Useful Apparatus

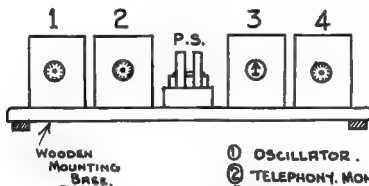
W. E. C. Bischoff, VK2LZ.

With a view to winning a Xtal microphone, and incidentally provide a piece of apparatus of value in the shack, it was decided to arrange a series of pieces of test gear in some manner that they would be reasonably portable.

The Xtal microphone was to be presented to the amateur who exhibited the best piece of apparatus at the N.S.W. W.I.A. Exhibition.

The oscillator can be either modulated or unmodulated, covering a wave-length of 9 metres to 2000 metres. Next the vacuum tube voltmeter, having two voltage scales, 7½ volts and 150 volts, its main use being line up, the telephony monitor, and, finally, the frequency meter, which can be used as a C.W. Monitor.

The filament and H.T. connections



- ① OSCILLATOR.
- ② TELEPHONY MONITOR.
- ③ V.T. VOLTMETER.
- ④ FREQ. METER.
- P.S. POWER SUPPLY.

It was decided to construct each unit separately shielded in its own case, and using a common power supply, and mount the lot in a larger unit, with only the 240 A.C. leads being taken away.

After considerable thought, the following were constructed as being necessary, and of the greatest use to the Amateur:—(1) Oscillator (Modulated and Cw), (2) telephony monitor, (3) vacuum tube voltmeter, (4) freq. meter. Each in its own box, 6" x 9" x 8" high, and the lot together, with the power supply screwed to a wooden base 3' long x 11" wide, as per assembled sketch. Figure A.

Broadly speaking, the units Nos. 2 and 4 are those necessary for correct receiver operation and adjustment, and Nos. 1 and 3 necessary for monitoring transmissions.

are made to the power supply, via 5 pin plugs and cables.

- (1) Oscillator covering 9-2000 metres, Modulated or Unmodulated.

This unit uses a 6D6 tube, and is electron coupled; three coils are used to cover the short-wave channels, one for the broadcast band and two more for the frequency range, from 550 metres to 2000 metres, a total of six coils in all.

Modulation is accomplished by using an audio transformer coupled between plate and screen circuits. This is shorted out screen winding when modulation is not required; mounted on the front panel is the tuning dial, pilot light and switch.

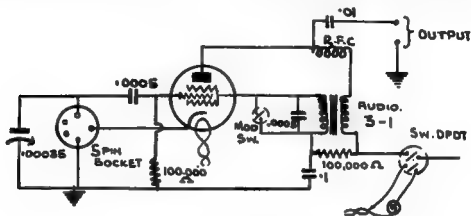
Output of the oscillator is fed to a plug mounted on the front of the panel, and to a plug connected to the

chassis. This may be used as an earth return should one be needed.

(2) Telephony Monitor.

This unit is merely a monitor to check the quality of a telephony

The audio output is connected to a 5-pin socket at the rear of case, and can be taken away to either phones or fed into the input of an amplifier for loud-speaker work.

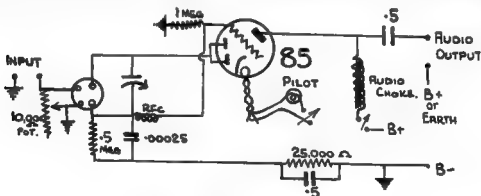


① OSCILLATOR. 9-2000 Mx.
(Mod. or C.W.)

transmitter. It consists of a duo diode triode tube 85. The two diodes are connected in parallel, and the triode portion, using a low mu triode, feeding the phones, which are normally used for monitoring. The circuit diagram is quite straight-

(8) Vacuum Tube Voltmeter, 7½ and 150 V Scales.

This unit consists of a 37 type tube used as a linear diode detector coupled to a second 37 DC amplifier. A 2-milliamp meter is in the cathode of this amplifier tube. Across this



② TELEPHONY MONITOR.

forward, and requires very little explanation. A 15,000 ohm potentiometer is used to reduce the input if it should be necessary. This is connected across the aerial coupling coil, and actually limits the pickup supplied to the detection diode.

2-millamp meter is connected a bucking battery (4.5v) and variable resistor to return the needle to zero setting.

The milliamp meter originally read $7\frac{1}{2}$ and 150 volts DC, but with the moving coil rewound to 2 milliamps

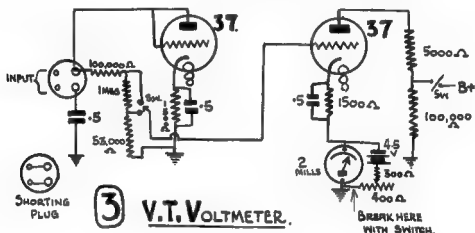
full scale it was found possible to use the original scale on AC voltages.

For DC measurements it is, of course, necessary to have the correct polarity, or no reading will be obtained.

The original intention of this unit was to measure and check the transmitting carrier for lopsided modulation, and for this purpose coils may be plugged into the 4-pin socket. When AC or DC voltage measurements are required, the shorting plug 1 is used, and feeds the input terminals direct to the diode. When a

lator, tuning across the Power portion of the broadcast band. An 11-plate condenser is used to tune the frequency meter, while a 23-plate midget is used as a padder. The idea of using the lower portion of the broadcast band was to enable a check to be made against either 2SM, 2CH, or 2UW, for accuracy of calibrations.

For use as a frequency meter sufficient output is obtained up to 14 MC harmonics without any extra coupling other than proximity to receiver. For use on 10 and 5 metres it is necessary to provide some addi-



coil is plugged in the tuned circuit is plugged between the plates of the diode, and the input terminals are connected to a coupling coil. It thus can be used very easily to measure changes in field intensity of the transmitter concerned. A bleeder of 15,000 ohms is connected across the B + Supply, which, in addition to that already contained in the Power Supply, maintains a constant voltage on the plate of this amplifier tube.

One 37 type tube is mounted on the subpanel, this being the diode, and the amplifier is mounted beneath the subpanel.

The unit is of great use when used in conjunction with the Oscillator, and these two are really indispensable for lining and keeping superhets in alignment.

(4) Frequency Meter and CW Monitor.

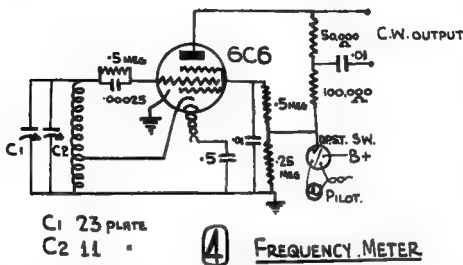
The unit consists of a 6C6 type tube as an electron-coupled oscil-

tional coupling, which can be coupled to the grid of the oscillator through a very small condenser consisting of two wires overlapping about 2 inches.

For use as a CW Monitor, the output is fed into a pair of phones or into an amplifier for speaker monitoring, via a lead connected to one of the pins of a 5-pin socket mounted at the rear of the subpanel. If extra pickup is required for CW Monitoring a length of wire is connected via a plug to the grid end of coil.

The 23-plate midget is used to set the vernier dial to the calibrated chart.

By using the phones on this unit, connected as for monitoring CW transmission, and coupling a short piece of wire, it is possible to heterodyne any of the three lower B Stations in Sydney. These provide a very accurate check, and the meter may be set on to its calibrated chart



very easily should temperature changes affect or alter the setting.

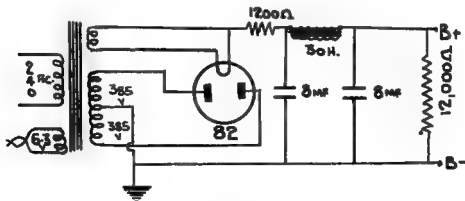
POWER SUPPLY FOR ASSOCIATED APPARATUS.

The power supply consists of a full wave rectifier 82 type, 385 volts, each side centre tap filtered with one choke and two 8 MF electrolytics. In order to prevent damage to electrolytics when no load is on power supply, a resistor of 1200 ohms is used in series with the rectifier and the first electrolytics condenser. In addition, a voltage divider of 12,000 ohms is connected across the output,

thus ensuring a comparatively constant output voltage. A 6.3-volt winding provides the necessary voltage for filaments of the various units. The 82-valve is mounted underneath the subpanel.

A switch in front breaks the A.C. lead, thus cutting the whole apparatus off.

Constructional details are not included, as it can be well left to the reader's own initiative, and the above has been chiefly a resume of its usefulness in an amateur's shack, and, incidentally, the completed job did win the Xtal microphone mentioned in the beginning.



Yes I Remember

(By 4MM.)

The look of surprise on the face of the Yank sparks when he had scrutinised the rig that laid down radiotelephony on his one-valver off New Hebrides, way back when 800 metres was UHF.

My sulphurous surprise when, two trips afterwards, he walked ashore with a one-valver in a cigar-box, and after certain necessary surgical attentions had been given to it, carried me back with it to the ship and logged a couple of 200-metre home stations. (P.S.—That was my first love affair, Elsie Hartley being the damsel.)

When I first fired up the old pack (W/T), set on around 2500 metres, and was warned off by certain gents with acrid keys and huge horsepower on 600M.

How a lubricated young gent., having decided to visit the shack, hopped the back fence and baulked at the car head-lamp that was wrapped round the old 7/22. He still maintains that he saw the "butter-

flies" that night.

When the plate tank coil of 211E tubes in parallel used to do to gramophone needles, and how the virgin 50 cycle disagreed with said valves.

How a certain circuit-breaker hopped out and refused to stay in. And how all and sundry spent weary hours looking for the reason, and desisted eventually for morning tea. And how the tea-bringer observed that the butterfly nut holding the breaker-spring in was three inches further up the threaded rod than it was two days before.

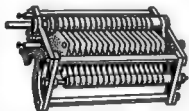
The 90-metre speed man. Jim Warner's fist on KHAB. Those ZL skeds with 45v. of B on the rx valves, and the same battery on the TX.

The good men I met, and the acquaintances that have ripened into friendship. And, of course, the ink I have slung in the Cause.

And, of course, the days of the Ford coil and carborundum xtal working down into the Bay with shipping anchored there. And then the night the home-made Poulsen arc exploded. I saw the marks on the wall of the old building a few months ago.

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all the wanted Parts. . .



"CYLDON" 250 MMF
XMIT'G CONDENSERS

1500 Volt Flash Over Ceramic
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Special Ham
Price **30/-**

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CUT. & BENT FREE WHILE YOU WAIT

3 each valve
socket hole

1/4" Per square inch!

PRICE'S RADIO SERVICE

(D. G. McINTYRE), 5 & 6
Angel Place, Sydney.

Notes from Federal Headquarters

Federal Convention, 1937.

The Federal Convention for 1937 will be held in Sydney during the Anniversary Day week-end at the end of January. Dates:—Jan. 30th, 31st, Feb. 1st. As there will be matters of vital importance to discuss, it is hoped that all States will spare no effort to make the Convention a success by sending one or more delegates. A programme of the above will probably be published in the next issue.

C.C.I.R., 1936.

The Fourth Meeting of the C.C.I.R. is to be held in Bucharest towards the end of the year. The amateurs of the world will be represented at the meeting by Messrs. J. C. Stadler, VE2AP, of Montreal, and J. J. Lamb, of Hartford, who are being sent to Bucharest by the I.A.R.U. Their report on this meeting, the forerunner of the Cairo convention in 1938, is awaited with much interest by all member societies of the I.A.R.U.

New Regulations.

The new Amateur regulations which became operative September 1st, have certainly achieved splendid results on the higher frequency bands. There will be a time in the not too far distant future when Australian amateurs may feel justly proud of the general signal quality on the various bands. Of course, there are a few amateurs who have complaints to make, but it must be realised that these regulations have been formulated with a view of deriving the greatest benefit for the greatest number.

CRYSTALS IN VACUUM.

AWA have announced a line of amateur quartz crystals in evacuated envelopes similar to the type 42 fitted with 4 pin bases. These crystals have a low temperature coefficient. Grade 1 has coefficient of less than 3 cycles per million per degree.

Grade 2 has coefficient of from 3 to 10 cycles per million and both grades are free of irregularities in their frequency-temperature range from 15 degrees to 45 degrees C. Supplies are available from stock.

Five MX Notes

During his recent holidays 3OT, energetic fellow, took along his portable gear and listened at various times for the city stations. Nothing was heard, but from observations made he is certain that city stations could be contacted from some of the localities that he visited, notably Mt. Franklin and Tarrawingee in central and north central Victoria. From Tarrawingee with its road to the top and its 90 ft. observation tower, a clear view is obtained of Arthur's Seat and beyond, over Bass Strait to the south, the Otway ranges to the south-west, and to Pyramid Hill and on towards Mildura to the north-west. Melbourne is just shielded from sight by a spur of the range at Mt. Macedon.

From Mt. Franklin, the crater of an extinct volcano with a 200 ft. climb to the top lip, Melbourne can be seen. From past results our portables can cover this distance, and in the near future an attempt shall be made to do so.

For the field day locations are as yet not decided. 3KQ, who has formerly operated from Mt. Macedon, expects to go to Ballan district. 3MR and another party have been there before, but only succeeded in hearing a total of one station for the two trips. It is hoped this time to find out just what is wrong with the locality. Another party is expected to go to Gisborne, where 3UH had bad luck last time in not hearing anyone.

3OF, owing to lack of transport, may have to operate from his home gra. He may yet succeed in going away. 3DH will once again be at Mt. Dandenong. 3JJ will be in Adelaide at the time, so shall not be taking part.

3KQ is first in again as on the last five mx field day he succeeded in hearing his home transmitter on 112 mcs or for those who cannot work that out it is the two and one-half mx band. This rig used about 15 watts input and finished up into a Vertical dipole. The signal was received on his 5 mx super het. Change of coils was all that was necessary to listen. Airline distance 42 miles.

Divisional Notes

N.S.W. Division

W. G. Ryan, Secretary, VK2TI, Box 1734JJ, G.P.O., Sydney.

COUNTRY ZONE OFFICERS.

ZONE 1 (Far West)—

J. Percoz, VK2PE, Hope Street, Bourke.

ZONE 2 (North-West)—

H. Hutton, VK2HV, Byron Street, Inverell.

ZONE 3 (North Coast)—

R. J. Berry, VK2NY, 54 Bacon Street, Carlton.

ZONE 4 (Hunter River and Coalfields)—

S. Grimmer, VK2ZW, 161 Tudor Street, Hamilton.

ZONE 5 (South Coast and South West)

MANLY DISTRICT RADIO CLUB.

On Oct. 3rd, 4th and 5th the club held a 5 mx observation camp at Blackheath, 3 members spending the week-end under canvas. A 5 metre superhet (57, 58, 59, 60) was used.

All our listening was confined to 5 mx. 2HL and 2WJ were stations that came in very well, 2WJ at times being R max on fones. 2 other stations were hrd on the low freq. end of band. Think one was 2ZN. It is intended to hold another camp shortly. The club is transmitting on 5 mx from the club-rooms with parallel 45's modulated by parallel 2A3's. All reports on transmissions will be acknowledged with the station's card.

2QK on 20 with 830 B's grid modulated. 2EL also trying for some 20 mx dx. Heard Alan 2HF on 5mx RS. Have since found out he was on 20. Not bad for 4th Harmonic, Alan.

Victorian Division

VK3DP

The October meeting was well attended owing to the very fine lecture given by Mr Gibbs of the R.A.A.F. on his trip to the South Pole for the rescue of Ellsworth and Kenyon. The

two hours of the lecture were filled with many interesting descriptions of Polar life, etc. Much amusement was caused by descriptions of shipboard life and incidents occurring on the trip. The enthusiasm with which the lecture was received and the questions asked by those present indicate that a few more talks of this type would be well received.

Among those present was Mr. Bennett, 3DR, of Shepparton, who was welcomed in the usual ham manner.

The Xtal donated by Mr. Howden was presented to Mr. Campbell, 3MR, who won the local DASD contest. Just another rock for the collection.

Another interesting item was the Council Representative's report on the forthcoming Cairo Convention. Log sheets have been received from the ARRL and all amateurs are requested to listen on the 6000 to 8000 Kc. and 4000 to 4500 Kc. bands and to log all commercial stations operating on these frequencies, together with time, approx. freq., material Xmitted. These sheets may be obtained from this section. Country members will be notified by Mr. Marshall, 3UK, with particulars, etc., and we hope that you will all co-operate as it is a matter that will concern everyone in the near future.

Reports of the 56M/c Field Day held on 6th September resulted in 46 points to the U.H.F. Section and 36 points to the Key Section.

3PW-3PL had better luck than 3MR on the Field Day, the owner of the hill collected to boil the billy, while 3MR had to dry his own firewood.

3UO.—Trouble galore, haywire crystal, "high efficiency" PA, Min. plate mils 29 to 45, hi! R9 on E.C. from Mallee wid 5 watts.

3YR in market for a new bottle.

3RV on 80 metre fone

3KE has new 8 tube super.

3DF-3TU still on 20 mx wkng sum DX wid OC's ant, hi!

3UH about to undertake manufacture of tourmaline Xtals for 5 metre work.

3YK hopes to have wind driven genny going in a few weeks; all prob-

lems in construction solved until it's tried out.

3OD on lookout for hi-powered bottle.

3YP too modest to state the number of 28M/c contacts or how many he takes to hole out.

3BQ has 28M/c beam for Yanks, but finds it upsets the pattern of the other 28M/c ant, so it's going to be scrapped.

3CX fractured another 7Mc. Xtal. Tritet on 14Mc.

U.H.F. GROUP—VK80F.

Following the sensations of the September 5 mx. field day events have moved quietly onwards on the 5 mx band in VK3. Notwithstanding this comparative calmness enthusiasm remains unabated and various stations have been operating consistently each week.

Among these pride of place must be given to Gil Miles, of 3KQ. Every spare second of time (and not that only) is devoted to the furthering of the 5 mx. band, although I believe that for one half second his fone was heard on 40 mx. A VK5 reported it as fb with modulation almost too good for a ham signal. Evidently that VK5 has never heard a VK3 5 mx station.

Another station that never misses is 3OT, Brighton. This station is on the air to a regular schedule at 1900. This is a general call and is not directed at any special station. Val's idea is to be of assistance to anyone who wants a hurried test before they go out for the evening. 3OT is at present using a T.P.T.G. circuit with P.P.245's feeding into a vertical half-wave zepp. With his location on top of a rise he gets out remarkably well and is an easy station to raise. 3XM, further south in Ormond, provides the hams in the northern suburbs with some dx to chase.

3JO did not take long to get on after his return from VK7. He was heard in Brighton at R8 while calling CQ. Evidently he has re-erected his antenna, which was blown down in a recent storm. These hurried jobs. Reverting to 3OT, a second storm completely demolished his big antenna. The first storm broke his pole into three pieces and bent the garage a trifle when it came to earth. The second blew the chips away.

The voice of Murray, of 3HZ, seems to have recovered from the strain of the recent exam. Rumor has it that he

passed. Congrats OM. He must rapidly be approaching his millionth qso with 3VH. This Bentleigh station with his elevation and his tall pole also provides the dx traffic path across the bay to 3LG at Newport. Les 3LG is at present using a 53 as osc., a 53 as class C, another as class A, while two 57s connected as triodes act as his mike amp. All this feeds into a figure H beam antenna. He was going to alter this but altered his mind and left it to a later date.

3OF decided not to go on the air until he had Xtal control. He set one perfectly good 40 mx xtal and one 53 to work in a Jones exciter unit, but nd. Using the xtal cannot obtain any transfer of energy into the 20 mx doubler. Replacing the xtal with a resonant grid coil everything works o.k. He wants to know what next? However, the bug was biting too bad and once again he is disturbing the air with a pair of 210's in a pp. T.P.T.G. Xtal control will be definitely used in the near future.

3DH once again has his super het. going and is very busy preparing for the next field day. He also has an idea of using his super het. as an overgrown transceiver. Early tests have been reasonably successful and his signals have been reported a couple of miles away. Ivor did not think that they were getting out, consequently did not listen to see if anyone was calling him. Unfortunate om. Nearly all stations are equipped with super hets now though 3OF still lacks one.

3KQ has an idea about a new layout for his rig, making due allowance for accessibility and ease of control.

Regarding the next field day, news is not yet to hand as to the arrangements to call and listen for VK5 and VK7. If everything goes as planned VK3 and VK7 should contact on 5 mx. From our higher southern hills we have a clean sweep across Bass Strait to Tasle. 200 miles is definitely not far when compared with reported everyday contacts in U.S.A.

If this attempt fails 3OF intends to take a higher powered rig to Olinda with its a.c. mains and 2000 ft. elevation. That should do the trick. Congrats are also extended to VK5 on their successful 5 mx field day. It is hoped that they will take part in our next. We in VK3 still have to identify those mystery stations heard last time.

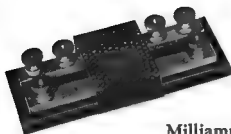
Just what work is being done on 5 mx in other States? We hear meagre



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reports here, but nothing definite. Will some of those active please communicate with VK3OF? This is really important. Some means must be found of unifying the work. And does anyone know the record distance covered in each State? Send your information along.

WESTERN DISTRICT NOTES.

III

Last month no less than four new hams in this district obtained their tickets, namely 3FA, 3SE, 3DE and 3XG. So far only two have been heard. 3SE is active on 7 mc, with M.O.P.A. that gives a good signal although with a fair back-wave. 3XG heard on 3.5 m.c. phone with quite good quality.

3BG, a newcomer in Bendigo, reports old 3OS as being again bitten by the bug and staging a comeback. 3GQ and 3KX are doing well in the DX contest, while 3GC and 3WW are also working on 14 m.c. There are at least three hams now in Hamilton, but 3AC is the only one to be heard. He puts over 240 metre programs occasionally. 3JE has definitely left this district, and is now located at Yarram.

3OW is seldom heard on any band now, possibly due to pressure of work with the shearing, while 3PG is never heard. 3HG doing a little in the Flak and DX contests and intends experimenting with 14 m.c. beam antenna and a wind-driven battery charging plant.

Conditions on all bands seem to have fallen off, 3.5 m.c. being practically dead, while DX is rather hard to raise on 7 and 14 m.c. with low power.

MALLEE AND NORTHERN DISTRICT NOTES.

(3ZK-3HX)

Conditions during the past month have been excellent on 14mc, 7mc, but on 3.5 mc the condx are rapidly breaking up, and before long the higher frequencies will be very crowded indeed. On 20 metres condx have been wonderful in this part of the State. Listening very occasionally many countries have been heard, Yanks, of course, making a very big hole in the speaker.

Condx on 40mx have been better than previously and any amount of DX can be heard when not QRM'd. hi! 80mx is very poor, QRN being practically constant and will be almost useless

during the summer months. Scandal.

3TIL is by this time on the air again wid a new rig operated from AC mains, and QRM-ing someone hi. "Treb" has 23 tubes working. Don't blow 'em all at once, Treb.

3KR will also be back on the air wid AC from mains and making those DX stations take notice, FB Ken OB.

3OR is putting a very nice sig out on 80mx, and will have by this time lined the rig up for HF. Flash !! Murray has a new car. Ask 3CE?

3CE has invested in a house lighting plant for himself, so will be on the air more consistently. Also bought a 30' windmill tower for a very low price.

3WN.—Jack informs us that he is or has shifted to a new qra, location—next door. Hi. Better for DX, Jack.

3HN.—Heard one night on 80mx fone, using the audio of rx for speech-amp. hi; will be on permanently soon.

3HR.—Amongst the missing. Believe Charlie is building something new and QRO. Look out gang.

3EP.—Got his new RX blooming; thought he would give 20 a flutter, so promptly put the rig down or up and proceeded to call CQ. Many were the stations that called Ted on 40 mx. Fine business, Ted.

3FF, of Corop, doing a very fine job wid flea pwr, worked a Yank on 40mx; wid 5 watts es got R6 FB Jock OB, es keep it up.

3GD.—Another new one, by name George Downing, at Stanhope, es no doubt will be on the air ere this is printed.

3BG, of Bendigo, is on 40 es 80 mx wid a chirpy note. Roth intends to rebuild and make a permanent rig, wid xtal control.

3NN is not heard very often, but is usually on the job for Sunday morning skeds. Another flash — has also bought a new car. Herb says it's supposed to do 90 mph. Whew!

3AL.—Frank is on 40 mx; es will be pleased to work any of the gang.

3CG, 3MK, 3PX haven't been heard for some time, but are possibly on higher frequencies and we are unable to hear them.

3WE has thrown out so many hints lately about nobody taking enough interest in his personality and the "TWINS" to include them in the notes So if we don't take notice something might happen, hi. Bill is putting out an FB sig from Omeo, but can't get a

pair of 50's class AB going. If you want some backchat, boys, work 3WE about 7p.m. hi.

3ZK has at last got that new rig going, but he got landed wid a dud triode section of a 6A6 so sent it back and is now on wid a new tube es fb fone, Jimmie is going to 2o es 40 mx between times working 3WE.

3HX is still (or might have 'em by this time) waiting on the 6P6's for gro. Works 3WE consistently, and has not got that Radio Auntie yet. Rumer has it that the gang are trying to put one over. You see we have been listening. hi, hi.

3KI heard on 80 mx with suppressor grid modulation to the RK20.

Tasmanian Division

At the October meeting, held on October 6th, the speaker was Mr. E. J. G. Bowden, D.R.I., and the subject dealt with was points on the New Regulations recently issued to amateur experimenters.

The half hour per QSO item seems to be the bone of contention amongst the gang here, but on the whole the new regulations have been favourably approved. The general opinion is that 40 metre fone should be banned altogether after dark. Until recently VK7 could plead not guilty to this offence.

The VIH gang propose to visit the Launceston boys over the Eight Hour week-end.

Three more members sat for their A.O.C.P. on Tuesday, October 13, namely Messrs. J. Dodds, D. Watson and C. Miller, and according to reports all did well.

Condx on the DX bands are fb. of late, in Hobart 20 mx being by far the most popular. At night the W fones are often R9 and are QSO'ed without any difficulty.

28M.C. is producing plenty of W's and ZS1H, but no Europeans as yet.

SCANDAL.

7YL rebuilding receiver now. (7 tube S.S.S.) and hopes to cause a panic amongst the Yank fones on 20 mx soon. At present, partly incapacitated through car accident, but happily nothing serious.

7DH.—Making whoopee with 3 stage rig, es nice T9 note. Lives very close to 7CL. Wow!

7PA.—Heard occasionally on 20 mx

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es join the mothers' meetings of a and regularly on 200 metres. Going to try a velocity microphone I believe.

7JH.—Hopes to install fone shortly Sunday a.m.

7KV.—Lays claim to the longest transmitter in VK. 6 foot of bread-board lay out. Did well in Fisk contest and at present taking a passing interest in DX contest.

7CL.—Also burning up plenty of power in test. Hopes to install 6L6's as modulators very shortly.

7CT.—On 80 es 40 mx with a M.O.P.A. now.

7WI.—Not on yet

7SR.—Signals Radio Club transmitter recently rebuilt is now using 53 xtal osc-dbler; 802 P.A. suppressor-grid modulated. Should be hrd regularly soon.

7NC.—At present shifting QRA. Hopes to be on again shortly.

7JB.—Latest addition is an Astatic D.2 microphone; es response definitely better than the old D104. At present losing plenty of sleep in DX contest; worked 20 countries so far.

Evidently the A.R.R.L. regard VK7 as a separate country from the rest

of VK, as the results published in Q51 of W/VE contest show 3MR as winner for Aust., and 7JB for Tasmania. We don't mind hi.

Heard from 2YL that 3EG had worked over 100 stns in 45 countries during first week-end of DX contest. How do u do it, Ivan?

7AB, 7LZ.—Hrd calling CQ. Test es plenty of dx coming back. First time the North has been seriously represented in DX contest. F.B. om's.

7RK, 7KR and 7CL.—Hrd in a three-way fone QSO last Sunday, 11th Oct. KR three points louder than RK down here in VIH.

7BQ.—Finds time to come on 40 mx fone a Sunday a.m. Very nice quality es that D104 mike, certainly sounds fb, Len, om.

7CJ.—Finds no difficulty in working W. with 25 watts to three stage xtal rig.

7BC.—Haven't hrd u yet, om, but ur outward cards certainly indicate plenty of activity

7CK.—Very active lately and regularly skeds 7LJ on 40 mx fone, Sundays. Contemplating installing a xtal D2 microphone.

R.A.A.F. Wireless Reserve Notes

Officer Commanding: Flying Officer R. H. Cunningham, 397 High Street, Glen Iris, S.E.6, Victoria (VK3ML).

District Commanders—

Second District, N.S.W.—A. G. Henry, Clareville Avenue, Sandringham (VK2ZK).

Third District, Victoria—Pilot Officer V. E. Marshall, 3 Myrtle Avenue, Kew (VK3UK).

Fourth District, Queensland—A. E. Walz, Sandgate Road, Nundah (VK4AW).

Fifth District, South Australia—F. M. Gray, 52 Ormond Grove, Toorak Gardens (VK5SU).

Sixth District, West Australia—S. J. Madden, Dundas Road, Maylands (VK6MN).

Seventh District, Tasmania—R. Cannon, Goldie Street, Wynyard (VK7RC).

Federal Notes.

All members outside the Victorian District will be interested to see the report of the D/C for that District on the mythical "war" that has been waging for some few weeks. This test of training under "active service" conditions appears to have done more for the general good of the District than all the contests put together. It has provided for an opportunity for mem-

bers to use their own initiative; the "something" that defines the difference between a good and a skilled operator.

A similar national exercise will be conducted within a month or so, employing every member throughout the Commonwealth.

Now that radio telephony procedure has been issued to District Commanders for passing on to members, we can look forward to a change from the W/T procedure

that has been used exclusively for eight years now.

Activity is at its highest in most Districts, but in the notes correspondents have failed to tell us all about it; so let us hope for brighter and better pages next month.

3rd District (VK3UK—3Z1).

There is so much to fit into the space allotted this month that it is hard to know what to cut out and what to put in. Unfortunately, 3Z1 was laid up with a bad bout of 'flu just as the Mag. went to press last month, and missed his notes for the first time. The main item of news that missed that issue was the Metropolitan Station meeting at 3Z1 to discuss the plans for the re-shuffling of sections, and also to make a presentation to 3D6 and 3C4. We made the night quite an informal one, with no visitors, because of the fact that none of the country men could get down. However, we may make 3D6 and 3C4 have their presentations re-presented on the first occasion that the district is together as a whole. At the same time, we can re-present the Trophy to 3B3, which 3Z1 had to do when last up there. These presentations were being held up for the Camp, but as it has been postponed there was nothing for it but to go ahead and make them without the country men being able to be present.

This month has been taken up completely by the first of a series of tactical exercises. This one was run more as an experiment than anything, but has proved a great success, so the next one is being formed in mind right away. This one took the form of a "war" between Victoria and an "enemy" attacking along the South Australian border. Each member of VMC represented an Air Force

unit, and handled exactly the same type of traffic that he would in a time of war.

All sections are going to be re-shuffled immediately now, so that each will be small geographically. Thus members of a section can get in personal touch with each other, as well as in the usual W/T manner. The present method of one Metropolitan station per section has many disadvantages, and it is felt that this new section scheme will be a big improvement. The new Metropolitan sections are planning to equip themselves with 56mc transceivers so that they can handle traffic by R/T down there as well. By the end of the month it is hoped that all sections will be handling R/T traffic, and thus will be versed in another type of R.A.A.F. procedure.

During the last six weeks we have been fortunate in having had quite a large number of country men down in the city. 3F9 was down twice, and 3D4 had a flying trip of a day. We were able to talk over the latest Reserve plans.

3B5, whom we have never seen in the city before, had a week here, and we were able to see quite a lot of him. There is no doubt of the fact that ten minutes' yarn in person is worth a ream of letters or a dozen QSO's.

3B6 was down for a few days last month, and we were able to confirm in person the rumours we had heard about his new super. It certainly must be a beautiful job. When Dick sets himself out to make a real job of anything, there is not a more painstaking Ham in the game.

3B1 is having surprising success with his indoor aerial, which he is using as a transmitting aerial for skeds.

(Continued on cover 3.)

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(Continued from Page 28)

3C1 seems to lead a great life. The latest information is that he is in Adelaide, after a good trip over by car. We are hoping to see him as he passes through VIM on his way back.

3D2 will be the most thankful member of the Reserve over this re-shuffle of sections. He can't work while 3A5, quarter-mile away, is on the job, but now they will be in the one section. His new generator seems to be working nicely.

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